

Japan 2011 Earthquake: U.S. Department of Defense (DOD) Response

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Overview

On March 11, a magnitude 9.0 earthquake jolted a wide swath of Honshu, Japan's largest island. The quake, with an epicenter located about 230 miles northeast of Tokyo, generated a tsunami that pounded Honshu's northeastern coast, causing widespread destruction in Miyagi, Iwate, Ibaraki, and Fukushima prefectures. As of May 23, over 15,188 deaths had been confirmed, with 8,742 missing and likely to be included in the final death toll. It appears that the tsunami, rather than the earthquake, caused nearly all the deaths. Entire towns were washed away; over 432,047 homes and 27,019 other buildings, as well as 3,700 roads were damaged or destroyed.¹

With almost 40,000 U.S. troops stationed in Japan, the situation was unique in that U.S. forces and associated resources were located in close proximity to deal with the crisis. All services—Army, Navy, Marine Corps, and Air Force—are present in Japan in various capacities. In addition, U.S. forces train regularly with their Japanese Self Defense Force (SDF) counterparts, including many humanitarian assistance and disaster relief exercises.

With over 100,000 SDF troops called up to respond to the disaster, U.S. forces were able to coordinate their efforts almost immediately to provide support for the Japanese responders. Within 8 days of the earthquake, the SDF had deployed 106,200 personnel, 200 rotary aircraft and 322 fixed-wings, and 60 ships. Nearly all of the Maritime SDF ships were transferred to the affected area, and forces from the southernmost to the farthest north territories were mobilized. After rescuing nearly 20,000 individuals in the first week, the troops turned to a humanitarian relief mission in the displaced communities, in addition to supporting activities at the troubled nuclear reactors.²

Summary of U.S. Operations

U.S. military troops and assets were deployed to the affected areas within 24 hours of the earthquake. At the peak, approximately 24,000 personnel, 189 aircraft, and 24 Navy vessels were involved in the humanitarian assistance and relief efforts. Major assets in the region were re-directed to the quake zone, including the USS *Ronald Reagan* Carrier Strike group. Further details are in the sections on each branch's operations below.

DOD Funding

According to US AID figures from late April, DoD committed an estimated \$88.5 million in assistance for the disasters, out of a total of over \$95 million from the U.S. government. It is possible that DOD might submit a supplementary budget request at some point in the future to cover related costs that could not be covered under current DOD funding.

DOD Facilities and Personnel

Initial DOD efforts after the earthquake were focused on “force protection,” such as relocating naval vessels and aircraft so that potential damage from the impending tsunami would be mitigated, as well as protecting and accounting for U.S. military personnel, 43,000 dependents, and 5,000 DOD civilian employees stationed in Japan. There were no reported DOD-related fatalities and no reports of major damage to DOD facilities or equipment.³

¹ Japan National Police Agency, http://www.npa.go.jp/archive/keibi/biki/higaijokyo_e.pdf.

² Japanese Ministry of Defense, <http://www.mod.go.jp/j/press/news/2011/03/16d.html>.

³ Cheryl Pellerin, “Military Gears Up to Help Japan,” *American Forces Press Service*, March 11, 2001.

After the State Department authorized the voluntary departure for family members and dependents of U.S. government personnel from northeast Japan on March 17, DOD followed suit for eligible DOD dependents. It was reported that Navy bases in the Tokyo area would begin voluntary evacuations for family members as early as the evening of March 17. The Navy reportedly has the capability to evacuate up to 10,000 people per day. On March 17, Admiral Robert Willard, Commander of the U.S. Pacific Command, stated that planning figures for an overall evacuation of U.S. citizens in the greater Tokyo area was about 87,300 personnel—a figure that includes eligible DOD dependents.⁴ In the event of such a large-scale evacuation, DOD would be expected to play a prominent role in planning, coordination, and execution, including the use of U.S. military ground vehicles, aircraft, and ships.

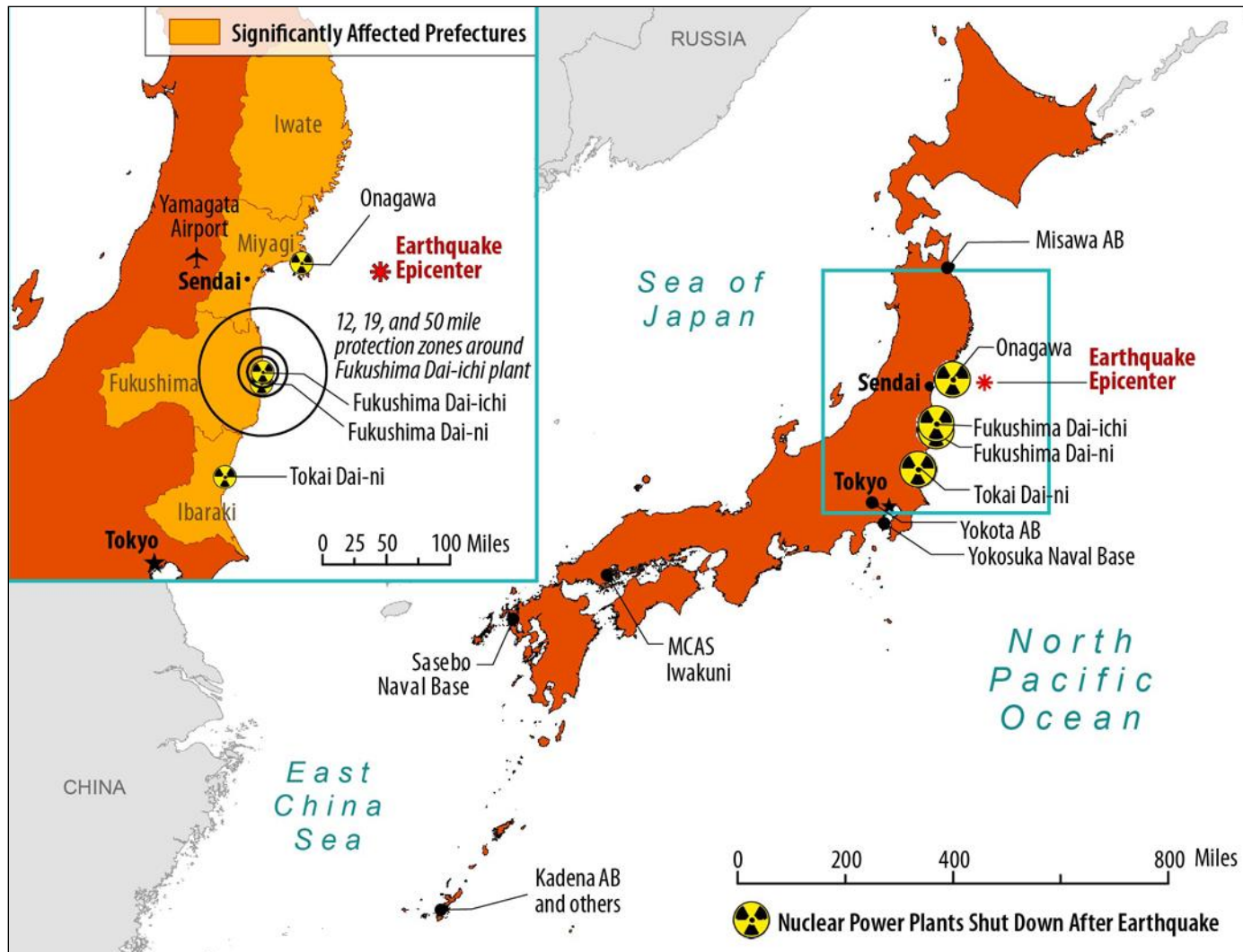
According to reports, more than 8,000 family members initially signed up for flights out of Japan. Flights have been departing from Naval Air Facility Atsugi, Yokosuka Naval Base, and Misawa Air Base. It was later reported that between 9,000 and 10,000 family members left Japan and about 7,800 of those departed on military-funded orders.⁵ On April 15, DOD reportedly rescinded its voluntary departure order allowing family members, who had left Japan as a result of the earthquake, to return.⁶

⁴ Information in this section is taken from a DOD transcript of a briefing given by U.S. Pacific Command Commander, Admiral Robert Willard on March 17, 2011.

⁵ Erik Slavin, “Military to Begin Bringing Family Members Back to Japan,” *Stars and Stripes*, April 16, 2011.

⁶ Ibid.

Figure 1. Map of Japan, Selected U.S. Military Facilities, and Areas Affected by Earthquake



Source: Prepared by CRS based on U.S. Department of State; National Geospatial Intelligence Agency; and GeoCommons data.

Operation Tomodachi Overview

DOD's relief effort was designated "Operation Tomodachi," using the Japanese word for "friend." The expeditionary capability of the U.S. forces allowed them to provide crucial support from sea as well as logistical coordination from a relief hub at Sendai airport. U.S. airlift capability was particularly valuable in reaching survivors in the devastated areas. U.S. efforts focused heavily on transport of relief supplies, SDF personnel, and equipment; surveillance of the affected area to search for stranded victims; and restoration of critical infrastructure, such as damaged airfields, in order to sustain operations. The existing structure of the SDF and U.S. bases in the region allowed for effective response to the overwhelming and multi-faceted disaster. The U.S. airbase Misawa, located in Aomori prefecture in northeastern Japan, was shaken violently by the earthquake but escaped with only minor damage. The facility was used as a forward operating base for both U.S. and SDF forces.

Years of joint training and many interoperable assets facilitated the integrated alliance effort. Operation Tomodachi was the first time that SDF helicopters used U.S. aircraft carriers to respond to a crisis. The USS *Ronald Reagan* carrier provided a platform for air operations as well as a refueling base for Japanese SDF and Coast Guard helicopters. Other U.S. vessels transported SDF troops and equipment to the disaster-stricken areas, such as the USS *Tortuga*, which transported 90 SDF vehicles and nearly 300 SDF soldiers to northern Honshu for relief work. After delivery, it served as a mobile operating base for helicopter missions.

Communication between the allied forces functioned effectively, according to military observers. For the first time, U.S. military units operated under Japanese command in actual operations. Specifically dedicated liaison officers helped to smooth communication; three Marine SDF officers served on board the USS *Reagan*, parallel to three U.S. Navy liaison officers on the JS *Hyuga*, a Japanese vessel. A small group of Japanese soldiers coordinated relief efforts between the civilian Sendai airport authority and the U.S. marines helping to reopen the devastated runways. Although the U.S. military played a critical role, the Americans were careful to emphasize that the Japanese authorities were in the lead.

One area in which U.S. troops played a key role was the re-opening of airfields and ports in order to allow more supplies to flow to the affected areas. Sendai's airport appeared devastated in the immediate aftermath of the earthquake; a day after the tsunami struck, it was still under eight feet of water. An Okinawa-based U.S. Special Operations Group that specializes in establishing forward supply bases in war-torn areas performed the initial work of removing debris, including over 5,000 cars that had washed onto the runways, allowing other aircraft to land. Some 260 marines worked side by side with Japanese troops. The airport began receiving relief supplies on March 15, and was re-opened to commercial flights on April 13. Similarly, U.S. forces cleared the ports of Hachinohe, Miyako, and Oshima, which had been heavily damaged by the tsunami, in order to establish further aid distribution centers.

Response to Damaged Nuclear Reactors

As the crisis surrounding the damaged reactors at the Fukushima Dai-ichi facility intensified, the United States stepped up efforts to assist the government of Japan. The Nuclear Regulatory Commission, Department of Energy, and Department of Defense all contributed assistance to help Japan deal with the nuclear crisis. Efforts included on-the-ground expertise, decontamination of assets, monitoring of contamination of food and water, aerial detection capability, high-pressure water pumps, fire trucks, and protective gear from radioactivity. The Navy provided two water barges that provided 500,000 gallons of fresh water to contribute to cooling efforts to the damaged reactors in the weeks after the tsunami struck. The Marines' Chemical and Biological Incident Response Force (C-BIRF) was deployed from the United States to provide training to the Japanese SDF forces operating in the area of the stricken reactor. On April 26, the C-BIRF began to redeploy back to the United States.⁷

Sophisticated equipment such as the Global Hawk drone flew over the reactor site in order to collect data and imagery for the GoJ.⁸ In addition to using Global Hawk unmanned aerial vehicles (UAVs) to monitor radiation, DOD also used U-2 surveillance planes from Okinawa outfitted with "radiation suites" and WC-135 Constant Phoenix aircraft from Offutt Air Force Base from Nebraska to take readings at various altitudes.

Selected Efforts of Individual U.S. Military Services

The sections below highlight efforts of the U.S. Navy (including Marines), Army, and Air Force in providing assistance to Japan. The information is not meant to be comprehensive, but rather offer an illustrative selection of the relief work undertaken by the U.S. military following the earthquake and tsunami.

Naval Activities⁹

The USS *Ronald Reagan* Carrier Strike Group, which includes the cruiser USS *Chancellorsville*, the destroyer USS *Preble*, and the combat support ship USS *Bridge*, was diverted from military exercises around Korea to conduct operations off the east coast of Iwate Prefecture. The group was later joined by the USS *Cowpens* and USS *Shiloh*. The USS *Ronald Reagan*, with its 3,200 sailors and 2,480 aviators and air wing personnel and 85 aircraft, in addition to conducting flight operations, served as a refueling platform for helicopters from the Japanese SDF, Japanese Coast Guard, and civilian authorities involved in rescue and recovery efforts.

The carrier USS *George Washington* and the guided missile destroyer USS *Lassen* left Yokosuka on March 21, 2011, so that the ships could be prepared to "sustain a state of readiness in the long term defense of Japan."¹⁰ The ships were held offshore near Shikoku Island, well south of Tokyo and the areas affected by the earthquake. The USS *George Washington* returned to Yokosuka on April 20.

⁷ Seth Robson and Chiyomi Sumida, "Marine Corps Nuclear Team Wraps Up Mission in Japan," *Stars and Stripes*, April 26, 2011.

⁸ "Northrop Drone Set to Overfly Japan Reactor, Seek Data on Damage," *Bloomberg News*, March 16, 2011.

⁹ Information reported on U.S. Navy Seventh Fleet Facebook page, various dates.

¹⁰ United States Pacific Command Operations Update on the Relief Effort in Japan, updated as of 4:05 a.m. HST March 21, 2011, http://www.pacom.mil/web/Site_Pages/Home_Page/AssistedDeparture-2011/21-Relief-effort-update.shtml.

Guided missile destroyers USS *Fitzgerald*, USS *John S. McCain*, USS *McCampbell*, and the USS *Curtis Wilbur* and the destroyer USS *Mustin* operated in close proximity to the USS *Ronald Reagan* Group, conducting search and rescue missions starting on March 13. The group flew hundreds of sorties to deliver humanitarian supplies to the affected areas.

The USS *Tortuga*, an amphibious dock landing ship that had been docked at the U.S. naval base in Sasebo, picked up over 90 SDF vehicles and nearly 300 SDF forces from Hokkaido, Japan's northernmost island, and delivered them to northern Honshu. The *Tortuga* then served as an afloat forward service base for helicopter operations. Some analysts cite the use of this amphibious ship as an exceptional example of flexibility in internationally coordinated efforts, given that it was responsible primarily for transporting Japanese troops and equipment and then provided a mobile operating base for the helicopter missions that were crucial for relief efforts.¹¹

The USS *Essex*, an amphibious assault ship with the 31st Marine Expeditionary Unit aboard, and the USS *Harpers Ferry* and USS *Germantown* amphibious dock landing ships were off the coast near Hachinohe on Japan's northeastern coast. Originally the ships were stationed in the Sea of Japan due to concerns about radiation levels closer to the Fukushima reactor site on the east coast.

Marine Corps Ground Activities

The Marine Corps provided a variety of hands-on ground services to assist the victims of the disaster. Activities included working closely with their Japanese counterparts to clear key transport points, establishing relief hubs, delivering humanitarian supplies to refuge centers, and restoring access roads.

The III Marine Expeditionary Force (MEF) opened a command element and two forward refueling points at the Yamagata airport, located about 35 miles from Sendai. The III MEF linked up with the Northeast Army of the SDF. The 31st Marine Expeditionary Unit (MEU) from the USS *Essex* established a Forward Control Element in Matsushima. The Logistics Combat Element (LCE) played a key role in providing support for the Joint Support Force Japan, allowing relief supplies to be flow in from Okinawa to Sendai Airport once it was re-opened.

After landing in a heavily damaged Air SDF airfield, four U.S. Marine Corp Humanitarian Assistance Support (HAS) teams from the III Marine Expeditionary Force worked with ASDF personnel. The HAS teams distributed water and other supplies, provided basic medical care for those in immediate need, surveyed damaged infrastructure in need of repair, and monitored the spread of potential disease among the displaced population. The marines also operated radiological surveillance in the vicinity of Astugi, Yamagata, and Sendai, and established two decontamination and monitoring elements in Astugi.

As the emergency relief mission wound down, marines continued clean-up efforts, such as participation in "Operation Field Day" that aimed to clean up schools to restore a sense of normalcy to the affected communities. Some units worked specifically for island communities, restoring electricity and providing temporary shower facilities in areas that had been isolated since the tsunami.

¹¹ "Operation Tomodachi Update," from *Information Dissemination: The Intersection of Maritime Strategy and Strategic Communications* blog post, <http://www.informationdissemination.net/2011/03/operation-tomodachi-update.html>. March 16, 2011.

Air Activities

In the early hours immediately following the earthquake, Yokota Air Base was used to recover airline traffic and as an alternate airfield for planes that could not land at Tokyo's Narita Airport. Initial air operations from Naval Air Facility Atsugi and the USS *Ronald Reagan* were focused on identifying survivors in need of assistance as well as delivering water, blankets, and food. Additional helicopters conducted surveys of the at-sea debris fields looking for survivors and also conducted search and rescue missions along the coastline. Two U.S. Navy P-3 Orion aircraft also participated in survey operations.

In the days following, air activities focused on delivery of supplies and repositioning of aircraft to accommodate the relief effort. U.S. Air Force and Marine helicopters and transport aircraft were moved from Okinawa to U.S. bases on Honshu to assist with operations. Carrier Airwing Five relocated scores of tactical fixed-wing aircraft from Atsugi to Okinawa and Guam to provide for incoming aircraft to be used in relief operations, and 14 rotary aircraft were delivered to Misawa. A team from Kadena Air Force Base assisted in clearing runways and opening towers at Matsushima Air Base in northeast Japan, allowing the base to be used as another major hub of relief supplies to be delivered by helicopter.

An RQ-4 Global Hawk, an unmanned, long-endurance aircraft that performs surveys of large geographic areas, was deployed from Anderson Air Force Base in Guam to assist with disaster relief. Using radar and optical surveillance, the aircraft was used to assess damage to infrastructure throughout the affected area.¹²

Ground Activities

As of March 22, the U.S. Army had 458 U.S. Army Japan personnel supporting Operation Tomodachi as well as 1,000 national labor contractors.¹³ The U.S. Army in Japan reportedly provided a 10-person team of translators, communications experts, and combat medics upon request of the Japanese Self-Defense Forces to help with disaster assessment efforts in the Sendai area. In addition, the U.S. Army Corps of Engineers Japan District provided an administrative system to help the U.S. Army Japan disaster assessment team with debris-removal efforts.¹⁴

¹² "Air Force Officials Use Global Hawk to Support Japan Relief Efforts," *Air Force News Today*, March 16, 2011.

¹³ Japan Earthquake and Tsunami Update, Wednesday, April 20, 2011, Center for Excellence in Disaster Management and Humanitarian Assistance, pp. 43-44.

¹⁴ Cheryl Pellerin, "Ships, Aircraft Support Japan Relief Effort," *American Forces Press Service*, March 16, 2011.

Background: U.S. Military Presence in Japan¹⁵

Current U.S. military personnel in Japan consists of 38,000 ashore and 11,000 afloat, 43,000 dependents, 5,000 DOD civilian employees, and 25,000 Japanese workers. U.S. forces are stationed in Japan pursuant to the U.S.-Japan Treaty of Mutual Cooperation and Security of 1960 and are dispersed among 85 facilities located on Honshu, Kyushu, and Okinawa.¹⁶ Total area of U.S. bases is approximately 77,000 acres; United States Forces Japan (USFJ) facilities range in size from a several thousand acre training area to a single antenna site. On mainland Japan, there are seven different bases/posts. Yokota and Misawa, representing the Air Force; Camp Zama, representing the Army; Iwakuni, the Marine Corps; and Yokosuka, Atsugi, and Sasebo, the Navy.

¹⁵ Information in this section is taken directly from the U.S. Forces Japan website, <http://www.usfj.mil/>, accessed on March 16, 2011.

¹⁶ See **Figure 2**.

Figure 2. U.S. Bases in Japan



Source: Adapted by CRS (6/1/06).

U.S. Army, Japan (USARJ)¹⁷

U.S. Army, Japan (USARJ) consists of about 2,000 soldiers and is charged, during peacetime, with operating port facilities and a series of logistics installations throughout Honshu and Okinawa. USARJ participates actively with the Japan Ground Self Defense Force in bilateral training exercises and the development of bilateral plans. It commands and supports U.S. Army assigned units, attached units, and augmentation forces and employs these forces in support of the Commander. USARJ maintains defense facilities, war reserves, and operational project stocks. USARJ/9th Theater Support Command (TSC) is headquartered at Camp Zama.

U.S. Marine Corps

The III Marine Expeditionary Force (MEF), which is under the operational command of Marine Forces Pacific, consists of approximately 16,000 marines, which are garrisoned primarily on Okinawa and southern Honshu. III MEF is headquartered at Camp Courtney, Okinawa.

U.S. Marine Corps Bases, Japan¹⁸

U.S. Marine Corps Bases, Japan, consists of approximately 9,000 military and civilian personnel and includes two air stations and nine camps/housing areas throughout Okinawa and mainland Japan. Its primary mission is to provide installation support and services, including force protection and quality of life, to forward-deployed Marine and Naval forces, other service members, civilians, retirees, family members, and others associated with U.S. Marine Corps Bases, Japan. HQs, U.S. Marine Corps Bases, Japan, is located at Camp Foster, Okinawa.

U.S. Navy¹⁹

Commander, Naval Forces, Japan, consisting of about 6,000 personnel, is responsible for maintaining and operating the port facilities and providing base and logistic support for those surface, subsurface, aviation, and amphibious elements of the U.S. Seventh Fleet that operate from Japan as part of the Forward Deployed Naval Forces (FDNF). U.S. Commander Navy Forces, Japan, participates with the Japan Maritime Self Defense Force in exercises and planning. CNFJ is headquartered at Yokosuka.

U.S. Seventh Fleet

U.S. Seventh Fleet, under the operation control of Commander, Pacific Fleet, has about 13,000 sailors, 18 ships, and 100 airplanes in Japan as part of the Forward Deployed Naval Forces.

¹⁷ Information in this section is taken directly from the U.S. Forces Japan website, <http://www.usfj.mil/>, accessed on March 16, 2011.

¹⁸ Ibid.

¹⁹ Ibid.

U.S. Air Force Japan (USAFJ)²⁰

The U.S. Air Forces, Japan/Fifth Air Force mission is to maintain the deterrent force posture of the United States and to conduct offensive and defensive air operations, should deterrence fail. Supporting that mission are approximately 13,000 military and civilian personnel located at units throughout Japan. In addition to the tactical air roles, USAFJ provides theater airlift and operational support with cargo airlift. USAFJ participates with the Japan Air Self Defense Force in bilateral training exercises and the development of bilateral plans. Fifth Air Force is headquartered at Yokota Air Base and is commanded by Commander, U.S. Forces Japan in a dual-hatted capacity.

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²⁰ Ibid.